What is claimed is:

1. A method for reducing a number of bits representing an encoded communication signal, the method comprising:

receiving an encoded communication signal represented by a plurality of frames, where each of said frames comprises at least one frame signal;

classifying said at least one frame signal in accordance with at least one characterization criterion selected from among a plurality of predetermined characterization criteria;

selecting a corresponding representation signal for each of said at least one frame signal, wherein the total number of bits comprised in a plurality of the selected corresponding representation signals, is less than the number of bits comprised in said encoded communication signal.

2. A method according to claim 1, wherein the step of classifying said at least one frame signal comprises classifying a number of sub-frame signals associated with said at least one frame signal, and wherein each of said sub-frame signals is classified in accordance with an appropriate at least one characterization criterion selected from among said plurality of predetermined characterization criteria.

3. The method according to claim 1, wherein the step of selecting corresponding representation signals for some of said frame or sub-frame signals, comprises discarding said frame or sub-frame signals, respectively.

4. The method according to claim 1, wherein the step of selecting corresponding representation signals for some

of said frame or sub-frame signals, comprises selecting corresponding representation signals that are essentially identical to said frame or sub-frame signals, respectively.

5. The method according to claim 1, wherein each of said plurality of frames is received at an equal time interval.

6. The method according to claim 1, wherein the corresponding representation signal of said at least one frame signal further comprises at least one information bit.

7. The method according to claim 6, wherein said at least one information bit comprises regeneration information to enable regeneration of said at least one frame signal out of its corresponding representation signal.

8. The method according to claim 6, wherein said at least one information bit comprises regeneration information to enable regeneration of a plurality of sub-frames out of their corresponding representation signals.

9. The method according to claim 2, wherein the corresponding representation signal of said at least one frame signal comprises a plurality of corresponding representation signals, each representing a sub-frame signal.

10. The method according to claim 9, wherein said corresponding representation signals further comprise a

plurality of information bits associated with said plurality of corresponding representation signals.

11. The method according to claim 10, wherein said plurality of information bits comprise regeneration information to enable regeneration of said sub-frames out of their corresponding representation signals.

12. The method according to claim 1, further comprising generating at least one message where said message is not comprised within said corresponding representation signals and comprises information to enable regeneration of said at least one frame signal out of its corresponding representation signal.

13. The method according to claim 12, wherein said at least one message comprises information to enable regeneration of a plurality of frame signals out of their corresponding representation signals.

14. The method according to claim 12, wherein said at least one message comprises information to enable regeneration of a plurality of sub-frame signals out of their corresponding representation signals.

15. A method according to claim 1, wherein a single corresponding representation signal is selected for representing a number of frame signals.

16. A method according to claim 1, wherein the step of selecting comprises decoding at least one of said plurality of frames to obtain at least one decoded frame, classifying said at least one decoded frame and selecting

a corresponding representation signal to representing said decoded frame.

17. A method according to claim 16, wherein the number of bits comprised in said selected corresponding representation signal is less than the number of bits comprised in said at least one of said plurality of frames in its encoded form.

18. A method according to claim 16, wherein decoding of said at least one of said plurality of frames comprises decoding at least one sub-frame comprised in said at least one of frame and obtain at least one decoded sub-frame, classifying said at least one decoded sub-frame and selected a corresponding representation signal for representing said decoded sub-frame.

19. A method according claim 1, wherein the step of selecting a corresponding representation signal comprises comparing at least one bit of at least one frame signal out of said plurality of frame signals with a pre-defined code list, and selecting a code to represent said at least one frame signal.

20. A method according to claim 2, wherein the step of selecting a corresponding representation signal comprises comparing at least one bit of at least one sub-frame with a pre-defined code list, and selecting a code to represent said at least one sub-frame signal.

21. A method according claim 1, wherein the step of selecting a corresponding representation signal comprises applying a mathematical algorithm to at least one bit of

the at least one frame signal and retrieving thereby a code for representing said at least one frame signal.

22. A method according to claim 2, wherein the step of selecting a corresponding representation signal comprises applying a mathematical algorithm on at least one bit of at least one sub-frame and retrieving thereby a code to represent said at least one sub-frame signal.

23. The method according to claim 22, wherein the code retrieved represents an entire frame signal of which said at least one sub-frame signal is part of.

24. The method according to claim 1 and also comprising:

generating reconstruction bits for at least some of the selected corresponding representation signals so as to enable the regeneration of the corresponding frame signals.

25. The method according to claim 2 and also comprising:

generating reconstruction bits for at least some of the selected corresponding representation signals thereof so as to enable regeneration of their corresponding sub-frame signals.

26. The method according to claim 24, wherein said reconstruction bits represent bits that are not included in said selected corresponding representation signals.

27. The method according to claim 24, wherein said generating step comprises generating reconstruction bits which comply with spectral characteristics and energy characteristics of the signal received in its encoded form.

28. The method according to claim 24, further comprising generating at least part of the reconstruction bits from parameters generated by a compressing device operative to transmit said selected corresponding representation signals.

29. The method according to claim 1, further comprising a step of transmitting said selected corresponding representation signals along a communication path extending between a transmitting end and a receiving end.

30. The method according to claim 29, wherein said step of transmitting is carried out in response to determining that a communication activity level along said communication path exceeds a pre-defined activity threshold level.

31. The method according to claim 1, wherein said encoded communication signal comprises an encoded speech signal.

32. The method according to claim 31, wherein a frame signal or a sub-frame signal is classified as being voice signal frame or sub-frame respectively, or as a noise signal frame or sub-frame, respectively.

33. The method according to claim 32, wherein said frame signal or sub-frame signal classified as being a voice signal is further characterized as being a stationary frame or sub-frame signal respectively, or a transition frame or sub-frame signal respectively, that comprises a change in phonemes.

34. The method according to claim 32, wherein said frame signal or sub-frame signal classified as being a noise signal is further characterized as being a silence frame or sub-frame signal respectively, or a background noise frame or sub-frame signal respectively.

35. The method according to claim 1, wherein the encoded communication signal comprises an encoded video signal.

36. The method according to claim 35, wherein a frame signal or a sub-frame signal of said encoded video signal is further characterized as a frame or sub-frame, respectively, as a frame or sub-frame with a rapid/slow change in respect of the respective preceding frame or sub-frame, or as a frame or sub-frame with a rapid/slow change in respect of pixels in that frame or sub-frame, respectively.

37. The method according to claim 1, wherein the encoded communication signal comprises a combination of an encoded speech signal and an encoded video signal.

38. A transmission method for use in a communication network, the method comprising the steps of:

receiving, at a first end of a communication path, a compressed communication signal provided at a first bit-rate, said compressed communication signal being represented by a plurality of frames generated by a codec, wherein each of said frames comprises at least one frame signal; and

if a communication activity level along said communication path extending between said first end and a second end does not exceed a pre-defined activity threshold level, transmitting said compressed signal at

the first bit-rate from the first end towards the second end, and

if the communication activity level exceeds said pre-defined activity threshold level,

classifying said at least one frame signal in accordance with at least one characterization criterion selected from among a plurality of predetermined characterization criteria;

selecting a corresponding representation signal for each of said at least one frame signal, wherein the number of bits comprised in a plurality of said selected corresponding representation signals, is less than the number of bits comprised in said compressed communication signal; and

transmitting said selected corresponding representation signals at a second bit-rate, which is lower than the first bit-rate, from said first end towards said receiving end.

39. A method for transmitting an encoded speech signal in a communication network, the method comprising the steps of:

receiving, at a first end of a communication path, an encoded speech signal provided at a first bit-rate, the encoded speech signal being represented by a set of frames generated by a speech codec that operates to produce bits in equal time intervals; and

if a voice activity level along said communication path extending between said first end and a second end of the communication path does not exceed a pre-defined voice activity threshold level,

transmitting the encoded speech signal at the first bit-rate from said first end towards said second end, and

if the voice activity level exceeds said pre-defined voice activity threshold level:

decompressing said encoded speech signal to obtain at least a partially decoded speech signal thereof,

re-encoding said partially decoded speech signal using an adaptive multi-rate coding algorithm to obtain a re-encoded speech signal at a second bit-rate which is lower than the first bit-rate, and

transmitting said re-encoded speech signal at the second bit-rate from the transmitting end towards the receiving end.

40. The method according to claim 39 and wherein said first bit-rate and said second bit-rate are selected from the following bit-rates such that the second bit-rate is maintained lower than the first bit-rate: 12.2kbit/s; 10.2kbit/s; 7.95kbit/s; 7.40kbit/s; 6.70kbit/s; 5.90kbit/s; 5.15kbit/s; and 4.75kbit/s.

41. Apparatus adapted for reducing a number of communicated bits and comprising:

a receiver operative to receive an encoded communication signal, the encoded communication signal being represented by a plurality of frames, where each of said frames comprises at least one frame signal;

a processor operatively associated with the receiver and operative to classify each of said at least one frame signal in accordance with at least one characterization criterion selected from among a plurality of predetermined characterization criteria, and to select a corresponding representation signal representing each of said at least one frame signal; and

a transmitter operative to transmit the selected corresponding representations signals, wherein the number of bits transmitted of the selected corresponding representation signals is less than the number of bits of the encoded communication signal received.

42. The apparatus according to claim 41 adapted to operate in a cellular communication network.

43. The apparatus according to claim 42 and wherein said cellular communication network comprises a Global System for Mobile communications (GSM) network.

44. The apparatus according to claim 41 adapted to operate as one of the following: a base transceiver station (BTS); and a base station controller (BSC).

45. The apparatus according to claim 41 and wherein said processor is also operative to generate, for at least some of the selected corresponding representations signals, regeneration bits which enable regenerating, approximately or identically, of non-transmitted bits of said at least some of the frame signals, and said transmitter is also operative to transmit said regeneration bits together with transmitted bits of the selected corresponding representations signals.

46. The apparatus according to claim 45 and wherein said processor is operative to generate the regeneration bits so as to comply with spectral characteristics and energy characteristics of an input signal from which said encoded communication signal was generated.

47. The apparatus according to claim 45, and wherein the processor is also operative to detect a communication activity level along a communication path extending between a first end and a second end, and wherein said transmitter is adapted to transmit said regeneration bits together with transmitted bits of the selected corresponding representations signals in response to a determination that the communication activity level exceeds a pre-defined activity threshold level.

48. The apparatus according to claim 41, and wherein the encoded communication signal comprises a compressed speech signal.

49. The apparatus according to claim 41, and wherein the encoded communication signal comprises a compressed video signal.

50. The apparatus according to claim 41 and wherein the encoded communication signal comprises a combination of a compressed speech signal and a compressed video signal.

51. A transmission apparatus for use at a transmitting end of a communication network, the apparatus comprising:

a receiver operative to receive a compressed communication signal provided at a first bit-rate, the compressed communication signal being represented by a plurality of frames generated by a codec, where each of said frames comprises at least one frame signal;

a processor operative to perform the following:

determine whether a communication activity level along a transmission path exceeds a pre-defined activity threshold level, and

if said communication activity level exceeds said pre-defined activity threshold level:

classify said at least one frame signal in accordance with at least one characterization criterion selected from among a plurality of predetermined characterization criteria, and

selecting a corresponding representation signal for each of said at least one frame signal; and

a transmitter operative to transmit the compressed communication signal at the first bit-rate if the pre-defined communication activity level does not exceed the activity threshold level, and, if said pre-defined communication activity level exceeds said activity threshold level, to transmit the selected corresponding representation signals at a second bit-rate which is lower than the first bit-rate.

52. The apparatus according to claim 51 and wherein the compressed communication signal comprises a compressed speech signal, the communication activity level comprises a voice activity level, and the pre-defined activity threshold level comprises a pre-defined voice activity threshold level.

53. The apparatus according to claim 52 and wherein said pre-defined voice activity threshold level is a voice activity of about 35 to 45%.